



Farmers building the sediment trap as one of the contract's conditionality. Photo: RUPES project team

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CHAPTER 36

Maintain the sustainability of PES program: Lessons learnt from PES implementation in Sumberjaya, Way Besay Watershed, Indonesia

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Highlights

- Engage various actors in the landscape since the beginning of program.
- Create the enabling environment to gain formal support and ensure sustainability.
- The PES activity on the ground needs to be linked up to the decision maker.
- Institutional setting at all level is necessary to prepare all actors in implementing PES.
- The policy and legal framework to support the institutions in all scale must be made available.

36.1 Background

Sumberjaya is an area located in the upstream of Way Besay Watershed, one of the main watersheds in West Lampung District, Lampung Province of Sumatra, Indonesia. About 40% of the 44,700 ha area of Sumberjaya is declared as the protected forest area. Since 2001, a state-owned Way Besay Hydroelectric plant (PLN-*PLTA Way Besay*) that provides electricity for Lampung Province and surrounding area in Southern Sumatra, has been operating in Way Besay Watershed.

Since the 1970s to 2000, Sumberjaya experienced a massive land-use conversion, particularly from forest into coffee plantations owned by smallholder migrants from Java. This coffee-farming activity was perceived to cause the sedimentation and erosion problems that worsen the watershed condition. Based on that perception and triggered by the plan to build a new hydropower plant in the area, in the period of 1990-1996 the government then evicted thousands of coffee smallholders from their land¹. The eviction had escalated a huge social conflict between the farmers and government. In 1998-2004, the World Agroforestry Center (ICRAF) collaborated with several NGO and donors (comprise of Watala, Ford Foundation, and the UK's Department of International Development) to resolve the conflict by facilitating negotiation based on scientific evidence and promoting sound land-use management through the improvement of coffee agroforestry system².

36.2 RUPES: PES Development in Sumberjaya

ICRAF conducted their activities in Sumberjaya from 2004-2012 by implementing an action research project called RUPES: **Rewards for Use of, and Shared Investment in Pro-poor Environmental Services**^{3,4}. The IFAD-funded RUPES project aimed “to enhance the livelihoods and reduce the poverty of upland poor in Asia while supporting environmental conservation at the global and local levels”⁴.

RUPES activities were carried out at two level; developing the practical Payments for Ecosystem Services (PES) mechanism on the ground while use the lessons gained from the ground to integrate the PES into development programs. The PES development in Sumberjaya can be grouped into three main activities^{2,5,6,7,8}.

Community Forestry (Hutan Kemasyarakatan, HKm)

Hutan Kemasyarakatan is a national social forestry program promulgated in 2000, in which the community group can obtain secured long-term forest utilization permits granted by the Ministry of Forestry. To obtain the permits, the community must follow the guideline from the Ministry of Forestry, such as plan and practice environmental-friendly farming, tree-planting, and forest protection activities. The activities carried out under HKm can contribute to ensure that forest and watershed continuously deliver the ecosystem services, and can be seen as an incentive scheme for providing ecosystem services. RUPES team then facilitated the dialogue with the HKm Program administrator to grant the coffee-farmers with HKm rights. At the end, RUPES succeeded to facilitate more than 6,000 farmers to access the HKm Rights in 13,000 ha or about 70% of protected forest area in Sumberjaya

Soil Conservation Auction Program

RUPES held a conservation auction⁶, involving the farmers in two villages along the upstream riparian of Way Besay, to compete for soil management contract of US\$2000/village. The winner of auction was determined from the lowest bid to carry out the sedimentation and erosion reduction activities in one year period. The practices comprised of techniques such as building terrace, sediment pit, and planting strip grass along the erosion-prone riparian. The winning price ranged from US\$ 150-160/ha/year, with the total contracted area of 23.75 ha. Conservation auction was a pilot initiative that only reached small group of farmers. In parallel with the auction, RUPES developed River Care Program to reach more farmers and create bigger impacts on the watershed conservation.

River Care Program

The operational of Way Besay hydroelectric plant depends on the water supply from Way Besay Watershed. The high sedimentation in the watershed has reached 200,000 m³ per year, contributed to the costly maintenance work of the hydropower turbine⁹. PLN-PLTA Way Besay stated that the capacity of their turbine was significantly reduced due to the sediment filling in their turbine, and the decrease of income due to erosion was estimated about US\$300,000 per year⁷.

In 2007, ICRAF piloted the River Care Program in Sumberjaya, in which ICRAF established a conservation contract agreement with the existing farmer groups to carry out sedimentation and erosion reduction activities. The selected groups will be compensated with financial payment based on their performance of sedimentation reduction. The number of compensation was given based on the availability of ES buyer's resources. The selected groups received the operational cost of US\$ 1000 in the first year to carry out civil construction and vegetation conservation activities, such as:

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1. Build and maintain the sediment retention dams in several hotspots in the river;
2. Digging sediment pits and ridging in the coffee garden, and sediment traps on public patch and gullies;
3. Planting strip grass in the erosion hotspots on the coffee plantation. In addition to that, the contracted group had to do water and sedimentation monitoring activities.

The community then would receive the payment based on the performance achieved on sedimentation reduction, as shown in the Table 36.1.

Interested with the promising result of the initiative, PLN-PLTA Way Besay then adopted the River Care PES scheme in 2008. To maintain the program sustainability when RUPES project ends, ICRAF started to engage the University of Lampung (UNILA) to replace the role of ICRAF in measuring the sedimentation and monitoring the PES Performance. RUPES also facilitated the establishment of a community based organization called Community Forestry Farmers Forum (FKKT-HKm), and succeeded endorse them to take the intermediary role for the River Care Program with PLN.

Initially established to support coordination between community groups that were granted HKm Permits, FKKT-HKm have two main roles in River Care Program:

1. Represent the community in River Care site preparation, contract negotiation, and agreement with the PLN,
2. Coordinate, supervise and monitor the ground activities, as stated in the contract.

RUPES ended in 2012 but the River Care Program was kept running between PLN-PLTA Way Besay, FKKT-HKm, and UNILA as the independent evaluator.

36.2.1 Sustainability Challenge: River Care after RUPES

During the beginning of RUPES, Indonesia government had just shifted the centralized government system into decentralization. With the decentralization, the local government, including the district government, has been given a bigger on the management of natural resources in their jurisdiction area. Thus, the involvement of local government as the development coordinator in the area is significantly important to maintain the sustainability of PES program.

Started with the HKm Initiative, RUPES had involved the local government agencies, comprise of the local planning agency, forestry agency, and extension agency, throughout its activities. However, during the River Care implementation, the dynamics of the local government (such as perpetual mutation of reliable contact person in the agencies and low interest to engage at the policy maker level) resulted in the low involvement of the local government in the program.

The PES River Care contract between FKKT-HKm and PLN faced a renewal phase in 2014. With low endorsement from the local government, FKKT-HKm members did not have sufficient capability to organize themselves and at that time the organization faced several problems. The problems can be grouped into internal and external problem as follow:

Internal Problems: The lack of managerial skills combined with low transparency in the organizational development had created tensions and distrust between the board members of FKKT-HK, all previously champion farmers from RUPES. As the result, two board members left the organization.

As a community based organization, FKKT-HKm was built and relied on social trust, equality, and mutual goals between its members. Consequently, no strict rules were applied to run the organization. The equal status of board members in the society outside of the organization made the conflict harder to be resolved internally.



Farmers planting tree on the sloping degraded land to reduce erosion. Photo: World Agroforestry Centre/RUPES team



Farmers planting the strip grass on their farm to reduce erosion. Photo: World Agroforestry Centre/RUPES team

External problems: Although River Care had been carried out for several years, there was no link with the district development framework that can be used as the legal basis to support the FKKT-HKm in River Care activity. The organization only built the network with staff of Extension office and had not gained sufficient support in the strategic decision-maker level. The lack of legal status has resulted in the low acknowledgement of FKKT-HKm as one of the stakeholder in Way Besay Watershed. Further, the lack of legal status made the local government could not contribute to support the FKKT-HKm in the time of needs, such as during the resolution of FKKT-HKm internal conflict.

As a result of these problems, PLN kept delaying the contract from FKKT-HKm. Being aware with the threat of River Care discontinuity, ICRAF then undertook an overview of the situation in Sumberjaya. The overview revealed the institutional problems from FKKT-HKm hinder the renewal of the contract with the hydropower company¹⁰. To support the River Care continuity, ICRAF collaborated with Rekonvasi Bhumi, a non-governmental organization that initiated a PES scheme in Cidanau^a, to facilitate the FKKT-HKm in resolving their problems¹¹. The 6 months facilitation comprise of the activities:

1. Facilitation of internal conflict resolution in FKKT-HKm
2. Capacity building of FKKT-HKm members on:
 - a. The administration and financial management of organization
 - b. Entrepreneurship activities through organic composting, to be synergized with the proposed livestock activities in the River Care 3
3. Facilitation of River Care Integration into West Lampung District Watershed Development Framework

^a See Chapter 34 Role of intermediaries in Payment for Environmental Services: lessons learnt from the PES Scheme in Cidanau Watershed, Indonesia

36.2.2 River Care Integration into District Development Framework

Concomitantly at the same time of ICRAF facilitation in 2014, a National GEF-funded program called Strengthening Community Based Forest and Watershed Management (SCBFWM) initiated the establishment of West Lampung District Watershed Forum (*Forum DAS Lampung Barat*). The Forum is under direct supervision of the District Head and its status was legalized in the West Lampung District Head Decree in December 2014. The District Forum member comprises of the government office that are involved in West Lampung watershed management, such as District Planning Agency, Forestry Agency, Agriculture and Livestock Agency, Food Security Office, Extension Office, and Environmental Agency, and other stakeholders.



Farmer building the sediment trap as one of the contract's conditionality. Photo: World Agroforestry Centre/RUPES team

The River Care Program in Way Besay is under the responsibility of the District Forum and its activity can be a model for the management of other watersheds in West Lampung. Looked at this opportunity, ICRAF then facilitated the negotiation with the District Forum to support the FKKT-HKm in implementing the River Care.

The negotiation between ICRAF with the District Watershed Forum has succeeded to integrate the FKKT-HKm in the Forum DAS Lampung Barat. To avoid the same institutional problem repeated in the future, the intermediary responsibility in River Care is now placed in the District Watershed Forum. To follow-up their role as the intermediary for River Care, Forum DAS established Way Besay Watershed Working Group (*Kelompok Kerja Peduli Daerah Aliran Sungai Way Besai*, the Working Group).

The Working Group as the part of District Watershed Forum became the secretariat that replace FKKT-HKm's role in River Care Program. The Working Group committee is led by a member of District Forum - a high level government officer from the Extension Office, while the committee members comprise of the representative from FKKT-HKm members and the district government agencies (forestry, livestock, agriculture, extension). Daily operations of River Care program is still under the responsibility of FKKT-HKm members, but as the Working Group now they have stronger legal status and contract could be established between them as Way Besay Watershed Working Group with PLN.

The Working Group establishment was formalized through a District Watershed Forum Decree signed in January 2015. The decree formally acknowledges the newly established group as a formal institution that work in Way Besay Watershed under the supervision and responsibility of the Lampung Barat District Government. Consequently, the Working Group is expected to expand their responsibility as River Care is only considered as one of the development tools being applied in the watershed. In addition to that, the working group had to develop rules and regulation and periodically provide reporting to the District Forum.

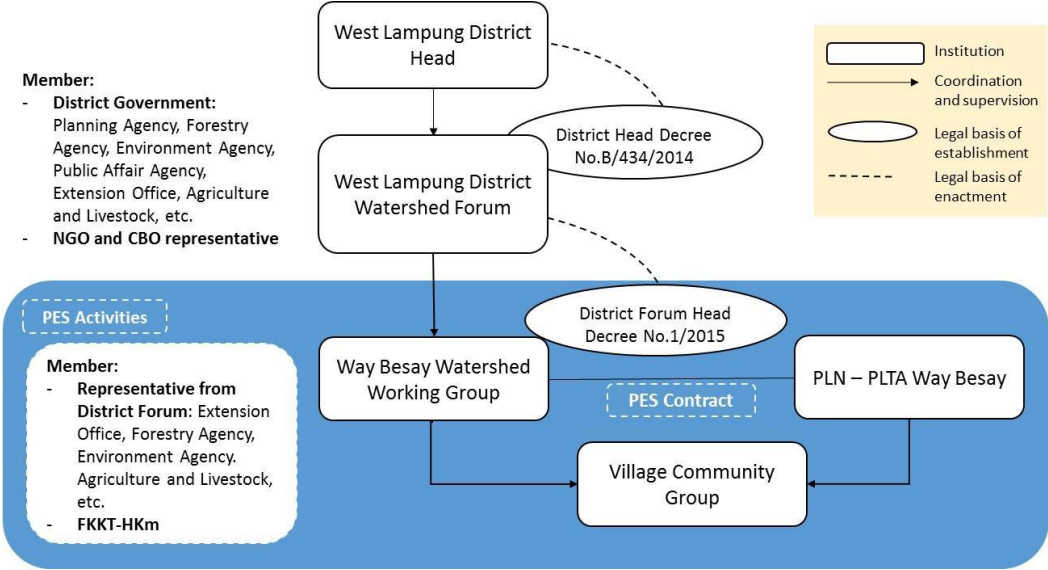


Figure 36.1 The governance of watershed and River Care Contract in Way Besay

Following to the Working Group establishment as an intermediary, PLN extended the River Care contract for another two years and this time the River Care Contract was signed with the Working Group. The District Forum also stated their interest to replicate the management scheme in Way Besay into another watershed within their jurisdiction.

Table 36.1 The Development of River Care Program in Sumberjaya, Way Besay Watershed

River Care Contract Period	2007-2008 (River Care Pilot Program)	2008-2014 (River Care 1&2)	2015-2017 (River Care 3)
ES Seller	Farmer Groups in Buluh Kapur Village,	Farmer Groups in Buluh Kapur and Talang Anyar Village	Farmer Group in Talang Bandung Village
ES Buyer	World Agroforestry Center (ICRAF)	PLN – PLTA Way Besay (hydropower company)	PLN – PLTA Way Besay (hydropower company)
Intermediary	World Agroforestry Center (ICRAF)	FKKT-HKm, community based organization	Way Besay Watershed Working Group (<i>Kelompok Kerja Peduli DAS Besai</i>), a subsidiary of the Government supported West Lampung District Watershed Forum (Forum DAS Lampung Barat) in which FKKT HKm is one of the member
Rewards	<ul style="list-style-type: none"> ● 30%: US\$ 1000 	<ul style="list-style-type: none"> ● 30%: US\$ 2000 or a micro-hydropower plant 	Year 2 conditionality and reward: <ul style="list-style-type: none"> ● >10%: a US\$3000 worth piko-hydropower plant
Conditionality 1: % Sedimentation	<ul style="list-style-type: none"> ● 21-29%: US\$ 700 	<ul style="list-style-type: none"> ● 21-29%: US\$ 700 	<ul style="list-style-type: none"> ● 5-10%: livestock worth US\$ 2000
Reduction, Annual financial rewards	<ul style="list-style-type: none"> ● 10-19%: US\$ 500 ● <10%: US\$ 250 	<ul style="list-style-type: none"> ● 10-19%: US\$ 500 ● <10%: US\$ 250 	<ul style="list-style-type: none"> ● 3-5%: livestock worth US\$ 1000
			Year 3 conditionality and reward <ul style="list-style-type: none"> ● >20%: a US\$4500 worth community center building ● 16-19%: livestock worth US\$ 3000 ● 10-15%: livestock worth US\$ 2000
Rewards	Not available	Not available	Only in year 1: <ul style="list-style-type: none"> ● 100 %: livestock worth US\$ 3000 ● 76-99%: livestock worth US\$ 2000 ● 50 -75%: livestock worth US\$ 1000 ● <50%: no rewards
Conditionality 2% Activity Completion, rewarded with livestock (goat, sheep, and cow)			
PES Performance Evaluator (Water and sedimentation monitoring)	World Agroforestry Center (ICRAF)	University of Lampung	University of Lampung

36.3 Conclusion

Watershed management in Indonesia has high level of complexity, represented in multi-faceted interactions between actors, sector, and cross-boundary arrangements. Hence, the implementation of Payments for Watershed Services needs to involve various actors, particularly the parties that are responsible in regulating and managing the watershed resources, which represented by the government.



Sediment trap to reduce the sedimentation. Photo: World Agroforestry Centre/RUPES team

The intermediary has a critical role in the PES Scheme, thus a strong intermediary that can balance the interest of provider and buyer will improve the effectiveness and efficiency of PES. The presence of government officer in Working Group is expected to strengthen the role of the organization as an intermediary, provide facilitation in negotiation, and gain political and capacity building support needed to maintain the sustainability of River Care. The process to synergize River Care activity with Sumberjaya district government development program will be much easier to do when the government is directly involved in the initiatives.

The Sumberjaya case provides an importance lesson on preparing enabling environment for the sustainability of PES. Thus, to gain support and ensure sustainability, the activity on the ground needs to be linked up and mainstreamed to the decision maker. The setting of institution must be done in the grass-root and strategic level while the policy framework to support the institution must be made available. Further, the monitoring beyond a PES project period from external actors that helped developing of PES is still needed to respond the dynamics that happen on the ground and maintain the continuity of the initiatives.

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